

Title (en)

Thin film polymer electrolyte fuel cell and method of operating the same

Title (de)

Dünnschicht-Polymerelektrolytbrennstoffzelle und deren Betriebsverfahren

Title (fr)

Pile à combustible à électrolyte polymère en couche mince et sa méthode de fonctionnement

Publication

**EP 1294039 B1 20100113 (EN)**

Application

**EP 02707165 A 20020326**

Priority

- JP 0202938 W 20020326
- JP 2001096953 A 20010329

Abstract (en)

[origin: EP1294039A1] It is difficult to realize a small fuel cell capable of being installed in mobile device by merely downsizing a conventional fuel cell without changing the configuration. The present invention provides a small fuel cell employing a polymer electrolyte thin film, by using a semiconductor process. A polymer electrolyte thin film fuel cell in accordance with the present invention comprises: a substrate having a plurality of openings; an electrolyte membrane-electrode assembly formed on the substrate so as to cover each of the openings, the assembly comprising a first catalyst electrode layer, a hydrogen ion conductive polymer electrolyte membrane and a second catalyst electrode layer which are formed successively; and fuel and oxidant supply means for supplying a fuel or an oxidant gas to the first catalyst electrode layer through the openings, and an oxidant gas or a fuel to the second catalyst electrode layer. <IMAGE>

IPC 8 full level

**H01M 4/88** (2006.01); **H01M 8/02** (2006.01); **H01M 8/10** (2006.01); **H01M 8/24** (2006.01); **H01M 4/92** (2006.01); **H01M 8/04** (2006.01)

CPC (source: EP US)

**H01M 8/04552** (2013.01 - EP); **H01M 8/0488** (2013.01 - EP); **H01M 8/1004** (2013.01 - EP); **H01M 8/2404** (2016.02 - US); **H01M 8/2418** (2016.02 - EP US); **H01M 4/921** (2013.01 - EP); **H01M 8/0247** (2013.01 - EP); **H01M 8/04171** (2013.01 - EP); **H01M 8/04197** (2016.02 - EP); **H01M 8/04291** (2013.01 - EP); **H01M 8/0687** (2013.01 - EP); **H01M 8/1009** (2013.01 - EP); **H01M 8/1097** (2013.01 - EP); **H01M 8/249** (2013.01 - EP); **H01M 2250/20** (2013.01 - EP); **Y02E 60/50** (2013.01 - EP); **Y02T 90/40** (2013.01 - EP)

Cited by

WO2010086003A1; EP4057401A4; FR2936103A1; FR2936104A1; DE102006026257A1; EP2216846A1; EP1521327A3; EP3080597A4; DE10255736A1; DE10255736B4; CN113678293A; US2022181658A1; US8551637B2; WO2009105896A1; WO2004012289A3; US8252479B2; US8741499B2; WO2015086888A1; US8232025B2; US8628890B2; US8790842B2; US9673476B2; US9859570B2

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 1294039 A1 20030319**; **EP 1294039 A4 20080430**; **EP 1294039 B1 20100113**; DE 60235058 D1 20100304; JP 4196374 B2 20081217; JP WO2002080299 A1 20040722; WO 02080299 A1 20021010

DOCDB simple family (application)

**EP 02707165 A 20020326**; DE 60235058 T 20020326; JP 0202938 W 20020326; JP 2002578596 A 20020326